

September 28, 2015

Tom Moe
USS Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: Project: NPDES-LINE 3 Wkly
Pace Project No.: 1253541

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory between September 16, 2015 and September 17, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Heather R Zika
heather.zika@pacelabs.com
Project Manager

Enclosures

cc: Terri Sabetti, Northeast Technical



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1253541

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

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SAMPLE SUMMARY

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1253541

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1253541001	WS-003 Thickner Overflow	Water	09/16/15 08:40	09/16/15 12:30
1253541002	WS-002 Scrubber Make-UP	Water	09/16/15 08:40	09/17/15 12:30

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SAMPLE ANALYTE COUNT

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1253541

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1253541001	WS-003 Thickner Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V
1253541002	WS-002 Scrubber Make-UP	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V

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ANALYTICAL RESULTS

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1253541

Sample: WS-003 Thickner Overflow Lab ID: 1253541001 Collected: 09/16/15 08:40 Received: 09/16/15 12:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	991	mg/L	5.0	0.29	10	09/21/15 14:22	09/23/15 11:55	7440-70-2	
Magnesium, Dissolved	ND	mg/L	5.0	0.67	10	09/21/15 14:22	09/23/15 11:55	7439-95-4	
Total Hardness, Dissolved	2480	mg/L	100	50.0	10	09/21/15 14:22	09/23/15 11:55		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	1780	mg/L	40.0	1.8	20		09/24/15 23:21	14808-79-8	

Sample: WS-002 Scrubber Make-UP Lab ID: 1253541002 Collected: 09/16/15 08:40 Received: 09/17/15 12:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	87.4	mg/L	5.0	0.29	10	09/21/15 14:22	09/23/15 12:27	7440-70-2	
Magnesium, Dissolved	196	mg/L	5.0	0.67	10	09/21/15 14:22	09/23/15 12:27	7439-95-4	
Total Hardness, Dissolved	1020	mg/L	100	50.0	10	09/21/15 14:22	09/23/15 12:27		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	794	mg/L	20.0	0.89	10		09/25/15 00:30	14808-79-8	

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QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1253541

QC Batch: MPRP/5865

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1253541001, 1253541002

METHOD BLANK: 248915

Matrix: Water

Associated Lab Samples: 1253541001, 1253541002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	09/23/15 10:43	
Magnesium, Dissolved	mg/L	ND	0.50	09/23/15 10:43	

LABORATORY CONTROL SAMPLE: 248916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	49.7	99	85-115	
Magnesium, Dissolved	mg/L	50	48.7	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 248917

248918

Parameter	Units	1253665001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	38.4	50	50	87.9	88.6	99	100	70-130	1	20	
Magnesium, Dissolved	mg/L	24.3	50	50	73.0	73.2	97	98	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 248919

248920

Parameter	Units	1253584001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	24.6	50	50	74.9	74.6	101	100	70-130	0	20	
Magnesium, Dissolved	mg/L	121	50	50	168	170	94	99	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1253541

QC Batch: WETA/13851

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1253541001, 1253541002

METHOD BLANK: 250622

Matrix: Water

Associated Lab Samples: 1253541001, 1253541002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	09/24/15 14:56	

LABORATORY CONTROL SAMPLE: 250623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	49.2	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 250624 250625

Parameter	Units	1253551001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	440	500	500	945	945	101	101	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 250626 250627

Parameter	Units	1253655002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	12.7	250	250	260	260	99	99	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1253541

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

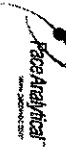
Project: NPDES-LINE 3 Wkly

Pace Project No.: 1253541

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1253541001	WS-003 Thickner Overflow	EPA 200.7	MPRP/5865	EPA 200.7	ICP/4589
1253541002	WS-002 Scrubber Make-UP	EPA 200.7	MPRP/5865	EPA 200.7	ICP/4589
1253541001	WS-003 Thickner Overflow	EPA 300.0	WETA/13851		
1253541002	WS-002 Scrubber Make-UP	EPA 300.0	WETA/13851		

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CHAIN-OF-CUSTODY / Analytical Request D
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed.

W0# : 1253541


PM: HRZ Due Date: 09/30/15
CLIENT: USS CORP


Section A Required Client Information: **Section B** Required Project Information: **Section C** Invoice Information:

Company: USS Corporation	Report To: Tom Moe	Attention:	Company Name:
Address: P.O. Box 417	Copy To:	Address:	Address:
Mt. Iron, MN 55768		Phone:	Phone:
Email:		Project Name:	Project Name:
Requested Due Date:		Project #:	Project #:
		Requested Analysis Filtered (Y/N)	Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID One Character per box (A-Z, 0-9 /, -) Sample IDs must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analyses Test	Y/N	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)	Regulatory Agency
				START	END			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other														
1	WS-002 Scrubber Make-Up	WT	9-16-15 08:40	9-16-15 08:40																									
2	WS-003 Thickener Overflow	WT	9-16-15 08:40	9-16-15 08:40																									
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RECEIVED BY AFFILIATION	DATE	TIME	ACCEPTED BY AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Paulmathe	9-16-15	12:30	Paulmathe	9-16-15	12:30	4.73 mg/L
SAMPLER NAME AND SIGNATURE							
PRINT Name of SAMPLER:				DATE Signed:			
SIGNATURE of SAMPLER:				DATE Signed:			
Paulmathe				9-16-15			
TEMP in C				Received on Ice (Y/N)			
				Custody Sealed Cooler (Y/N)			
				Samples Intact (Y/N)			

	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt	Client Name: <u>USS Corporation</u>	Project #: WO#: 1253541
	Courier: <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input checked="" type="checkbox"/> Client <input type="checkbox"/> Commercial <input type="checkbox"/> Pace <input type="checkbox"/> Other: _____	 1253541
Tracking Number: _____		

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No
 Seals Intact? ☐ Yes ☒ No
 Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other: Hugob
 Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808
 Type of Ice: ☒ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 4.4
 Cooler Temp Corrected °C: 4.7
 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C
 Correction Factor: 1.013
 Date and Initials of Person Examining Contents: 9/16/15 ms

			Comments:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.	Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes Date/Time/ID/Analysis Matrix: <u>Wt</u>			
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.	
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (If purchased):			

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Heather Zuo

Date:

9/17/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)